



DEPARTMENT OF PUBLIC SAFETY AND CORRECTIONS

Public Safety Services



M. J. "MIKE FOSTER, JR.
GOVERNOR

V J. BELLA
STATE FIRE MARSHAL

INTERPRETIVE MEMORANDUM 2002 - 17

To: Licensed Architects
Licensed Engineers
Licensed Sprinkler Contractors
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From: Jean Carter, Architect Supervisor
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Approved by: Mark Gates,
Deputy Assistant Secretary

Date: November 14, 2002

Re: Protection of Rubber Tire Storage

This Interpretive Memorandum replaces this office's February 29, 2000 Inner-Office Memorandum regarding protection of rubber tire storage. This Interpretive Memorandum is established to further define sprinkler scope criteria for protection of rubber tire storage.

NFPA 231D, "Standard for Storage of Rubber Tires", 1994 edition, and NFPA 13, "Installation of Sprinkler Systems", 1999 edition, are currently promulgated for use by this office. NFPA 101:2.1, 2000 edition, includes NFPA 13 and NFPA 231D as mandatory references. NFPA 101 has no specific requirement for protection of rubber tires, other than the references to NFPA 13 and NFPA 231D noted above. The commentary to NFPA 101:2.1 clarifies that the listed documents are mandatory only to the extent called for in the code. The commentary further adds, "*For example, although NFPA 13 is listed here, this does not mean that all buildings must be sprinklered. Rather, where NFPA 101 requires them to be sprinklered.*" Please note the following excerpts from NFPA 231D and NFPA 13:

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231D:1-1.2 The provisions contained in this standard shall apply to new facilities for tire storage and the conversion of existing buildings to tire storage occupancy.

231D:1-1.3 Miscellaneous tire storage, as defined in this standard, shall be permitted to be protected in accordance with NFPA 13.

The definition of miscellaneous tire storage is provided in NFPA 231D:1-2 and 3-3, and is reiterated in NFPA 13:1-4.10, as follows:

Miscellaneous Tire Storage: The storage of rubber tires that is incidental to the main use of the building. Storage areas shall not exceed 2000 square feet. On-tread storage piles, regardless of storage method, shall not exceed 25 ft. in the direction of the wheel holes. Acceptable storage arrangements include (a) on-floor, on-side storage up to 12 feet high; (b) on-floor, on-tread storage up to 5 feet high; (c) double-row or multi-row fixed or portable rack storage on-side or on-tread up to 5 feet high; (d) single-row fixed or portable rack storage on-side or on-tread up to 12 feet high; and (e) laced tires in racks up to 5 feet in height.

The NFPA 13 Technical Committee has previously conveyed to this office that the intent of the 25 feet maximum pile length denoted above implies that no storage of any type is permitted between the tire piles. The committee implied that a minimum 8 feet gap between on-tread storage piles is needed to prevent a fire jumping from one pile to another.

231D:4-1.1 Automatic sprinklers, where provided, shall be installed in accordance with NFPA 13.

The NFPA 231D Technical Committee on Rubber Tires revised Section 4-1.1 in the 1998 edition, as follows:

231D:4-1.1 Automatic sprinklers shall be installed in accordance with NFPA 13, except as modified by this standard.

Please note that the words “where provided” were removed from the 1998 edition.

Based on the above code excerpts, this office determines that the intent of NFPA 231D is to require an automatic sprinkler system in all buildings storing rubber tires. However, NFPA 231D and NFPA 13 are ambiguous regarding the scope of sprinkler protection in buildings used **in part** for tire storage that would otherwise not be required to be sprinklered buildings.

NFPA 231D and NFPA 13 are also ambiguous regarding sprinkler protection in buildings that include miscellaneous tire storage. Miscellaneous tire storage is a specifically defined scope of limited tire storage.

Because of the ambiguities described above, the following definitive code interpretations are hereby established regarding sprinkler protection of rubber tires:

1. Buildings Containing Tire Storage Greater Than the Scope of Miscellaneous Tire Storage.

- A. Sprinkler protection shall be provided throughout the building, regardless of occupancy type or number of occupancies. Such systems shall fully comply with NFPA 231D and NFPA 13.
- B. In accordance with this office's February 29, 2000 Inner-Office Memorandum, the following guidelines shall also apply:
 - 1) Prior to the 1994 edition of NFPA 231D, the term "miscellaneous tire storage" did not exist.
 - 2) Small scale tire storage was defined as less than 10,000 units.
 - 3) All tire storage buildings constructed or remodeled pursuant to plans submitted to this office prior to May 31, 1998, shall not require sprinkler protection when storing less than 10,000 units.

2. Buildings Containing Tire Storage of 2000 Square Feet or Less and Within the Scope of Miscellaneous Tire Storage, but Greater Than 50 Tires.

Retail tire service and similar facilities are often classified as multiple use occupancies: mercantile, industrial and storage. Without the introduction of tire storage, the building may not be required by NFPA 101 to incorporate a building sprinkler system. NFPA 101:8.4.1.1 requires special protection from any area having a degree of hazard greater than that normal to the general occupancy of the building. Miscellaneous tire storage shall be acknowledged by this office as a severe hazard. Therefore, both Parts (1) and (2) of NFPA 101:8.4.1.1, are required, as follows:

- A. 101:8.4.1.1(1) *Enclose the area with a fire barrier without windows that has a 1-hour fire resistance rating in accordance with Section 8.2.* As an equivalency to the 1-hour barrier, this office will accept the following alternative. Taking guidance from NFPA 13:7-6.2.2, the required sprinkler protection for miscellaneous tire storage shall extend 15 feet beyond the perimeter of the tire storage area. This 15 feet protective zone shall extend through all adjacent areas and/or rooms of the building adjacent to the tire storage area.

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- B. 101:8.4.1.1(2) *Protect the area with automatic extinguishing systems in accordance with Section 9.7.* NFPA 101:9-7 requires compliance with NFPA 13. Therefore all portions of NFPA 13 addressing sprinkler protection for Miscellaneous Tire Storage shall be adhered to.
- C. If the remainder of the building is not required to be sprinklered in accordance with NFPA 101, then additional sprinkler protection beyond the miscellaneous tire storage area is not required.

3. Buildings Containing Tire Storage of 50 Tires or Less.

In accordance with this office's February 29, 2000, Inner-Office Memorandum, the following guidelines shall apply:

- A. Storage of 50 tires or less shall be deemed "incidental" to the overall occupancy hazard.
- B. This incidental storage of tires shall not be subject to the sprinkler requirements of NFPA 231D and NFPA 13.

JCC/jcc

cc: Wanita Pepper, Imaging Files